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THE POOLING OF RAILWAY FREIGHT CARS.

DURING the past ten years railway consolidation has been more rapid than at any other period. This was caused primarily by growing competition and demoralization of rates, accompanied with increased cost and decreased margin of profit. While the cost of moving traffic has decreased because of the introduction of hitherto unknown economies, the cost of maintenance per road-mile has increased. The net results do not compare favorably with those of twenty-five or thirty years ago, since the decreased cost of transportation does not offset the increased cost of improved service, such as fast freight, fine trains of parlor, library, and buffet cars, and the more important reduction in rates of over 50 per cent. The following figures make a comparison which tells its own story :

Year	First-class rates from Indianapolis, Ind.			Car		Average load	
	Boston	New York	Buffalo	Capacity.	Length	Tons	% of capacity of car
1868	\$1.70	\$1.60	.85	20,000	27 feet	8½	85
1900	.76½	.69½	.44	{ 50,000 100,000	33 to 50 feet	14	47

There are in North America approximately 1,250,000 freight cars owned by railway companies. For years these have not earned enough (in car mileage) to pay a fair interest on the investment (about 650 million dollars), and to provide for depreciation and maintenance.

Attempts to secure greater economy of service have been made. Much money and energy have been spent in introducing and operating the system of rating trains on a tonnage basis. This has brought about good results and will accomplish more, but not all the leaks have yet been stopped. Every year the railways spend millions of dollars which are lost sight of. One of the principal causes of light loads, expensive switching

at large terminals and empty mileage, has been overlooked. That is, *the handling of foreign cars in accordance with initials, marking of cars, or ownership.*

In 1896 I spent considerable time investigating the loss to railroads caused by cars lying idle at junction points, and by transferring and switching because owners did not wish cars to go beyond their own line. The loss of revenue and the expense of transfer exceed 25 million dollars. I believe even a larger amount is wasted every year because of the system of handling cars by ownership.

To the uninitiated a parallel case can best be shown by supposing A loans B two one dollar notes of specific numbers or marks and requires the same identical bills returned in payment of the loan. That is what railways have done for thirty years and are doing today. There is not a road today in any section of the country that has not seen a time when it was short of cars, while some distant or non-connecting road has had a surplus of the same class of cars. They might just as well not be in existence for all the good they do the road that needs them, as there is no means, under present methods, of utilizing them.

A shipper often unloads a car and has ready a load to send out needing the same kind of car as the one which he has at hand and empty. But he must wait until this car is removed and another, differing only in initials or ownership, is received. A reform in this matter would evidently benefit the shipper as well as the carrier.

"What are we to do about it?" has been asked time and again. Plan after plan has been suggested. A few have been tried and abandoned, and railroads continue to build cars, notwithstanding the fact that the number of cars, or the tonnage carrying capacity, is 25 per cent. greater than is necessary to handle the largest business ever moved by the railroads.

The straight per-diem system, pure and simple, would no doubt greatly increase the performance of cars, but even this will not decrease, and may increase, the expense of moving the cars, if they continue to be handled according to ownership or initials.

No plan, in my mind, will ever accomplish a maximum performance with a minimum number of cars until some scheme is devised whereby the borrower or user and the owner participate in the loss or profit involved in the movement of, or delay to, the cars.

Under present conditions A may hold B's cars for prospective loading. It costs A nothing, but B loses the use of the cars and the revenue they might be earning on his own line. If A were a joint owner of the cars, would they be delayed in this manner? We think not. Again, if A has on his line as many cars belonging to B as B has of A's, each has to keep a record, thus making double work and double accounting. Under a co-operative plan each would report to owners the full amount of earnings, which both, being part owners, would endeavor to make as large as possible. The expense of tracing, duplicate records, etc., would be saved.

Every restriction placed on a car retards its movement or availability for service. The fast-freight-line marks that used to predominate are nearly discarded, because they prevented the fullest use of cars. Using the language of the Car Accountants' Association at its Cleveland meeting in 1896:

From the standpoint of car supply, it restricts the availability for the general business of the country, as there is only *one* route by which a line car can properly be sent home. The requirement that cars bearing certain line marks must be selected for loading *via* a particular route makes it necessary to do a great deal of switching to obtain the proper cars, and often results in a great deal of empty haulage to get them to the point of loading. . . .

It is evident that any restrictions upon car movements that will cause unnecessary switching and delay will also reduce the average daily performance of cars, thereby requiring a greater number to handle a given tonnage. The more restrictions *of any kind* that are put upon cars, the less service they can be made to yield, because of the greater resistance they offer to the prompt handling of traffic.

The same authority gives further reasons for eliminating such marks:

1. The cars would be more available for general loading, and could be applied on orders *via any line or route*.

2. The switching service would be curtailed, the proportions of empty handling reduced, and delays to cars shortened. (Hence increased tonnage hauled.)

3. The average daily performance of cars would be increased; the business of all lines would be handled with greater facility and fewer cars. As line marks restrict, so does any route or ownership marking.

A similar opinion, expressed in a paper on "*Per Diem versus Present Practice*," read at the meeting of the Central Association of Operating Officials at St. Louis, in July 1899, states:

One of the additional recommendations of the per diem plan is that it will eventually lead to the pooling of freight equipment, which would be a blessing indeed, for on every division of a railroad, almost every day, you will find empty cars moving in both directions for no other reason than that certain foreign cars that happen to be at a certain terminal, or on a certain division, cannot be loaded in the desired direction, because such loading would be a misuse of the cars, and they must therefore be exchanged with other empties at some other terminal or division of the same system, and many thousands of dollars are unnecessarily spent annually by the roads in this country under this practice.

A number of other authorities confirm this view. Thus one of our prominent general superintendents says: "The saving in cost of handling of equipment would be incalculable." The president of one of the largest Chicago lines, in writing to the president of one of the Vanderbilt lines says: "I believe there is more money to be saved in this way than in any other." The Eastern Association of Car Service Officers, in 1897, passed the following resolution:

Resolved, That a general distributing office or clearing house with subsidiary bureaus be established for the purpose of regulating and increasing the supply of cars between railroads to meet legitimate demands of traffic.

Under the present system many factors unite to decrease revenue and to increase expenses. These are:

1. Idle equipment at certain periods on some lines while the same class of cars is needed in other sections of the country.
2. The hauling of empty cars of the same class in contrary directions on account of route or initials.

3. The large amount spent annually to switch certain empties out of sidings, houses, etc., and to switch similar cars back a few minutes later to load out *via* lines other than those owning the empties switched out.
4. Unnecessary switching to get some particular car out of a long string of empties to fill some specific order, when the first car on siding is exactly the same kind of car, only of other initials, than the one desired.
5. The expense of traveling car agents, tracing clerks, stationery, postage, telegraphing, etc.
6. Loss of earnings from cars idle, at junction and other points, awaiting transfer or in process of transfer, to save mileage, or at owner's request.

On the other hand, co-operation or common ownership would secure the following advantages :

1. Increased performance of all cars, which means a maximum business with a given number of cars.
2. No building, for several years to come, of any new equipment save to replace cars destroyed.
3. Decrease in empty and foreign mileage.
4. Saving in switching and terminal expenses.
5. Reduction in train mileage.
6. Increased earnings from greater supply of cars.
7. Decrease in expenses of inspectors, repair shops, material, maintenance of way, car repairs, wheelage or trackage expenses, clerical work, telegraphing and stationery.

To secure these desired ends I would make the following recommendations :

Pool box cars 33 feet to under 40 feet, inside length, as those sizes handle the maximum amount of traffic and are used a greater portion of the year on all lines.

Assign to each class of cars a letter, as outlined in my address before the Central Association of Car Service Officers in annual convention at Toledo, Ohio, July 1896, and before the St. Louis Railway Club, St. Louis, Mo., August 1898, said letter to be first initial on car, thus :

- A — Common box car.
- B — Furniture car.
- C — Ventilated box car.
- D — Refrigerator car.
- E — Single deck stock car.
- F — Feed and water stock cars, etc., etc.

Indicate length by another letter, giving it second position, thus :

- A — Under 33 feet.
- B — 33 to under 34 feet.
- C — 34 to under 35 feet.
- D — 35 to under 36 feet.
- E — 36 to under 37 feet.
- F — 37 to under 38 feet.
- G — 38 to under 39 feet, etc., etc.

Show the capacity of car in the same manner, by a third letter, thus :

- A — Under 40,000 pounds.
- B — 40,000 to 50,000 pounds.
- C — 50,000 to 60,000 pounds.
- D — 60,000 to 70,000 pounds.
- E — 70,000 to 80,000 pounds.
- F — 80,000 to 90,000 pounds.
- G — 90,000 pounds, etc., etc.

Example : A box car 36 feet 9 inches inside length, 60,000 pounds capacity, now marked "C. M. & St. P., 39514" — new plan "A E D 5002."

Abolish all car initials, except those indicating class, length and capacity of car. Individual ownership or identity can be retained if necessary by giving each road consecutive numbers, and stencilling on each end, under the running board "C. M. & St. P. Ry. Co., owners," or, "Southern Pacific Co., lessors."

There are, approximately, 350,000 box cars 33 feet to under 40 feet in length. There should be organized an equipment company to operate the cars for the owners; each owner taking stock in the company in proportion to the value of its cars, determined by the master car builder's rules or by valuation.

There should be established a general or central office with district offices and managers; each road to handle its own distribution as at present.

The basis of charging for use of cars at present is far from satisfactory. I would suggest graduated rates, as follows :

IF ON MILES RUN, PER-TON CAPACITY.

Size	Rate per 10 tons	30 ton car	25 ton car	20 ton car	Under 20 ton cars
33 feet - - -	2.0 mills	6.0 mills	5.0 mills	4.0 mills	3.0 mills
34 feet - - -	2.0 mills	6.0 mills	5.0 mills	4.0 mills	3.0 mills
35 feet - - -	2.1 mills	6.3 mills	5.25 mills	4.2 mills	3.15 mills
36 feet - - -	2.2 mills	6.6 mills	5.5 mills	4.4 mills	3.3 mills
37 feet - - -	2.3 mills	6.9 mills	5.75 mills	4.6 mills	3.45 mills
38 feet - - -	2.4 mills	7.2 mills	6.0 mills	4.8 mills	3.60 mills
39 feet - - -	2.5 mills	7.5 mills	6.25 mills	5.0 mills	3.75 mills

IF ON PER-DIEM, PER-TON CAPACITY.

Size	Rate per 10 tons	30 ton car	25 ton car	20 ton car	Under 20 ton cars
33 feet - - -	6 cents	18 cents	15 cents	12 cents	9 cents
34 feet - - -	6 $\frac{1}{3}$ cents	19 cents	16 cents	13 cents	10 cents
35 feet - - -	6 $\frac{2}{3}$ cents	20 cents	17 cents	14 cents	11 cents
36 feet - - -	7 cents	21 cents	18 cents	15 cents	12 cents
37 feet - - -	7 $\frac{1}{3}$ cents	22 cents	19 cents	16 cents	13 cents
38 feet - - -	7 $\frac{2}{3}$ cents	23 cents	20 cents	17 cents	14 cents
39 feet - - -	8 cents	24 cents	21 cents	18 cents	15 cents

Such graduated compensation, in addition to the justice of the plan, would be an incentive to roads to use only such cars as they needed to handle the business.

Car repairs could be pooled also and based on proportion of mileage, or per diem, under master car builder's rules of lines interested. This would certainly mean earlier uniformity of standards.

Who can estimate the saving in stationery, labor, etc., which would result? The present multiplicity of initials would be reduced to a very small number; it would be unnecessary to consult equipment lists to learn the kind, capacity, or length of cars. In ordering cars, where we now say "50 C., B. & Q., 30-foot, 30-ton box cars, 30 C., M. & St. P. 30-ton, 34-foot box cars," the new scheme would merely order "100 A C D cars."

J. R. CAVANAGH.